# National Weather Service Spring Flood Outlook

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National Weather Service – Omaha, NE

February 11, 2020

# Upfront Information

- Away from ice jam prone rivers there is generally a **normal risk** for spring flooding this year.

- Flooding this spring will be largely dependent on the location and intensity of additional precipitation and thunderstorms.

- The next outlook will be February 25th, 2021.

# Spring Flood Outlook Factors

## As of February 11th

| Flood Risk Contribution Factor | Contribution to Flood Risk |
|---|---|
| **Snowpack (North and South Dakota)** | Below-Normal Risk |
| **Snowpack (in Nebraska and Iowa)** | Below-Normal Risk |
| **Snowpack (Missouri River headwaters)** | Normal Risk |
| **Snowpack (Platte River headwaters)** | Below-Normal Risk |
| **Soil Moisture** | Below-Normal Risk |
| **Streamflow** | Normal Risk |
| **Frost Depth** | Normal Risk |
| **Precipitation Outlook** | Normal Risk |

# Upfront Information

- There is a **higher-than-normal risk for ice jam flooding** along the following rivers:
  - Loup River
    - Near the Loup River/Platte River confluence.
  - Platte River (downstream of Columbus)
    - Especially around Fremont/Big Island area.
  - Niobrara River
    - Verdel and upstream to Highway 281.

- The next slide shows the ice jam threat in more detail by risk factor.

# Ice Jam Threat

## As of February 11th

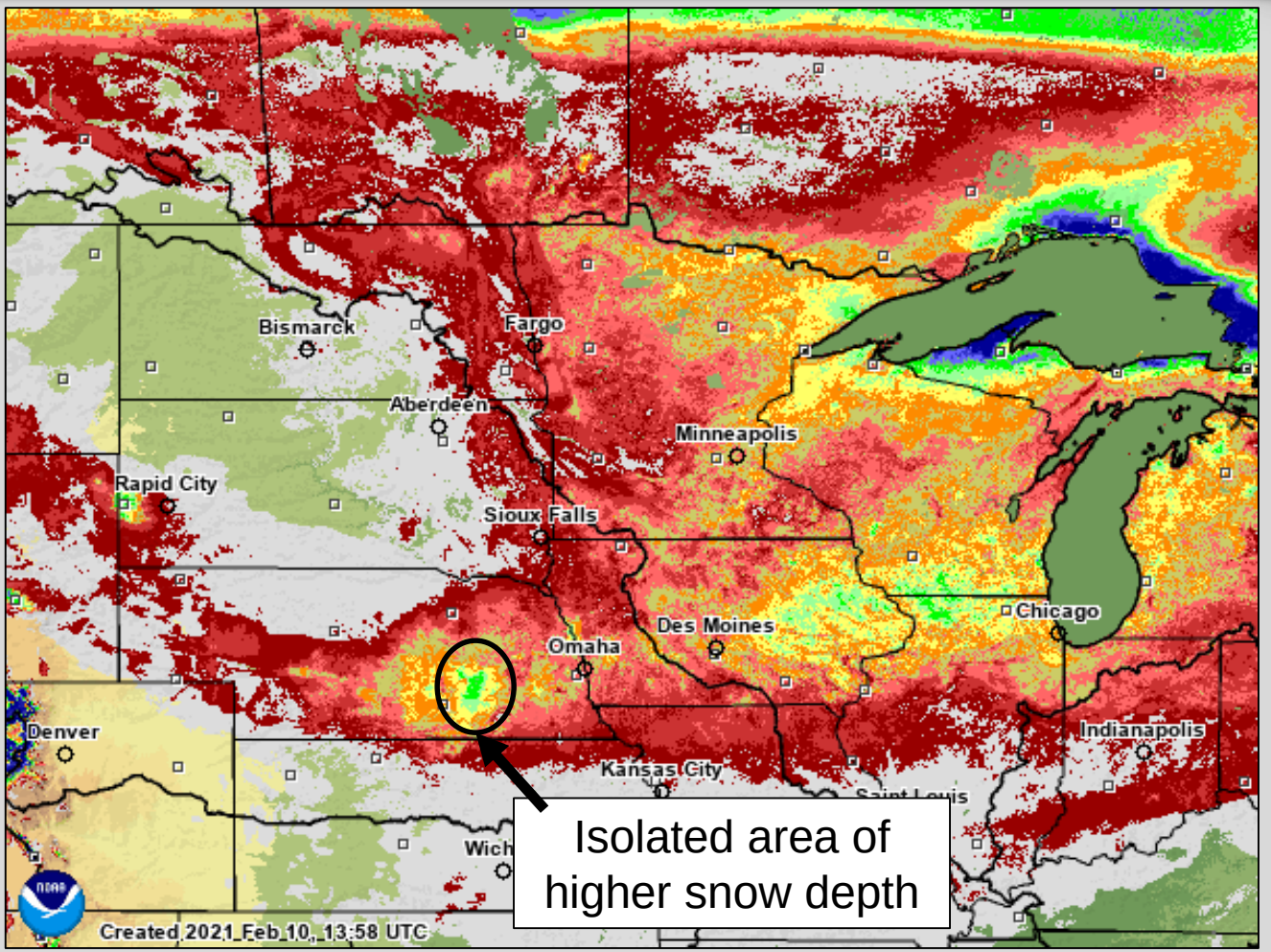
| Ice Jam Contribution Factor | Contribution to Ice Jam Risk |
|---|---|
| Ice Thickness | Above-Normal Risk |
| Snowpack | Above-Normal Risk |
| Streamflow | Normal Risk |
| Short-Term Temperature Outlook | Much Above-Normal Risk |
| Short-Term Precipitation Outlook | Normal Risk |
| Long-Term Temperature Outlook | Above-Normal Risk |
| Long-Term Precipitation Outlook | Normal Risk |

# Summary

- The overall flood risk for this spring is generally **normal**. This risk is normal due to:
  - Below normal soil moisture.
  - Below normal mountain and Plains snowpack
    - Though isolated areas of a robust snowpack do exist in central Nebraska.
- There is an **above-normal** risk for ice jam flooding along ice jam prone rivers. Of most concern is the Platte River downstream of Columbus.

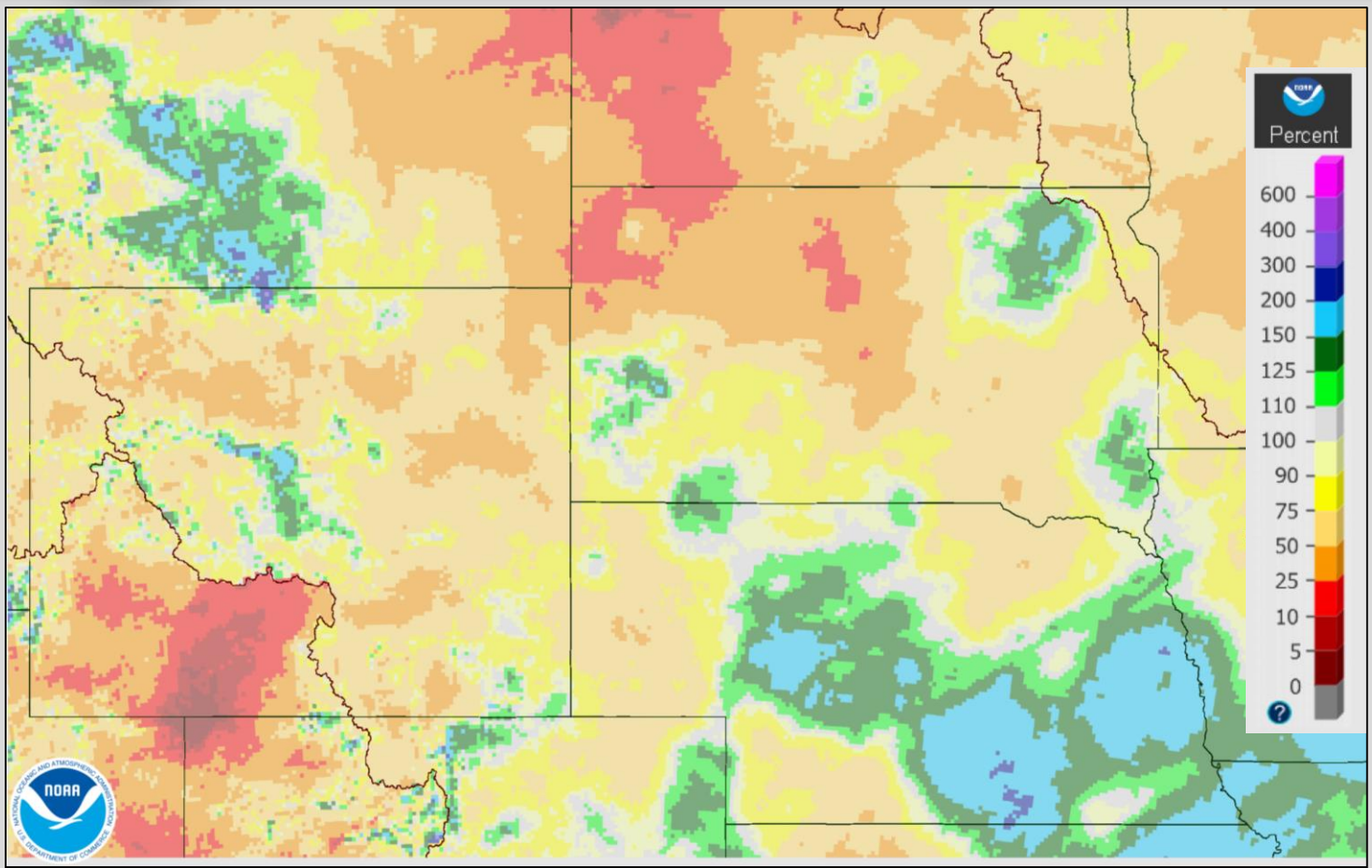
The following slides provide additional details for each flood risk factor and information on specific river basins.

# Plains Snowpack




Most of the Plains snowpack is concentrated over eastern Nebraska and western Iowa. As of 11 February, the flood risk due to snowmelt alone is lower than normal. However, this existing snowpack does elevate the potential ice jam risk, especially along the Platte River.

# Winter Precipitation (compared to normal as a percentage)



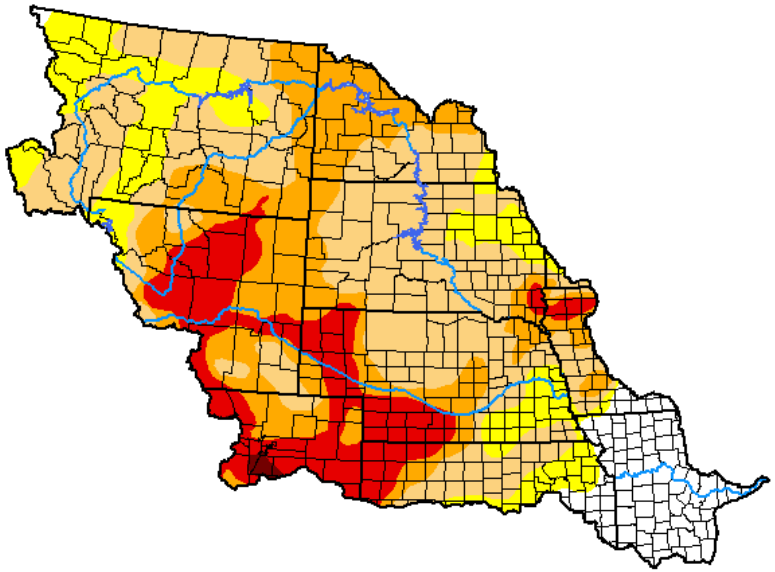

Isolated pockets of higher-than-normal precipitation have been observed in portions of central and eastern Nebraska.

- Precipitation the past three months has been 125-150% above-normal in some areas.
- Most of the region has been very dry with drought conditions since last Summer.

# Drought Status

*U.S. Drought Monitor*

## Missouri Basin RFC



**February 2, 2021**

*(Released Thursday, Feb. 4, 2021)*

**Valid 7 a.m. EST**

*Drought Conditions (Percent Area)*

| | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 |
|---|---|---|---|---|---|---|
| **Current** | 8.97 | 91.03 | 76.36 | 38.36 | 14.68 | 0.31 |
| **Last Week** *01-26-2021* | 8.18 | 91.82 | 76.25 | 38.18 | 14.13 | 0.31 |
| **3 Months Ago** *11-03-2020* | 3.09 | 96.91 | 64.72 | 32.89 | 11.06 | 0.31 |
| **Start of Calendar Year** *12-29-2020* | 8.77 | 91.23 | 69.23 | 34.21 | 15.09 | 0.34 |
| **Start of Water Year** *09-29-2020* | 11.52 | 88.48 | 51.83 | 22.52 | 5.58 | 0.00 |
| **One Year Ago** *02-04-2020* | 93.20 | 6.80 | 0.00 | 0.00 | 0.00 | 0.00 |

*Intensity:*

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx*

*Author:*

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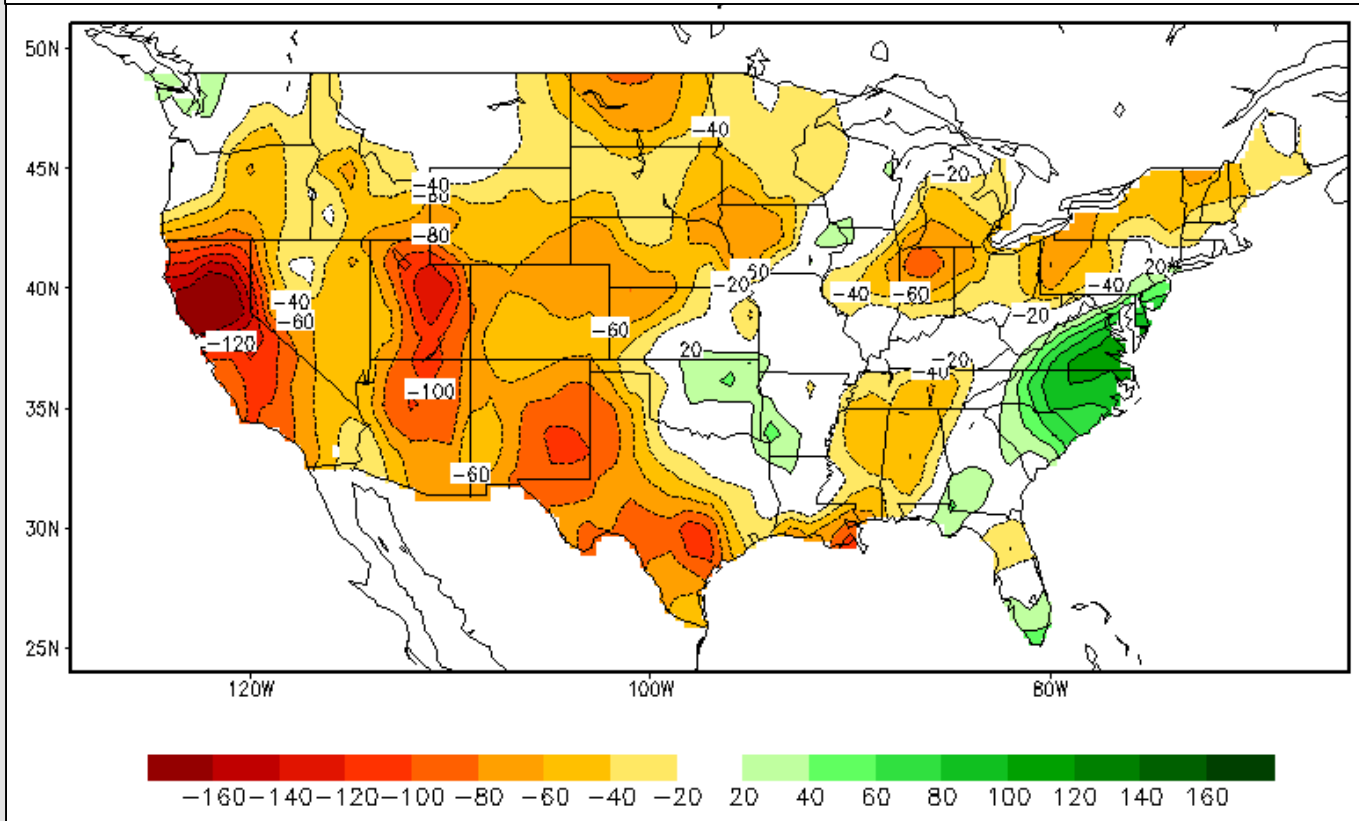
U.S. Department of Agriculture

**droughtmonitor.unl.edu**

- **Much of the Missouri River basin is in moderate to severe drought. This "dry condition" acts to lower the overall flood risk.**

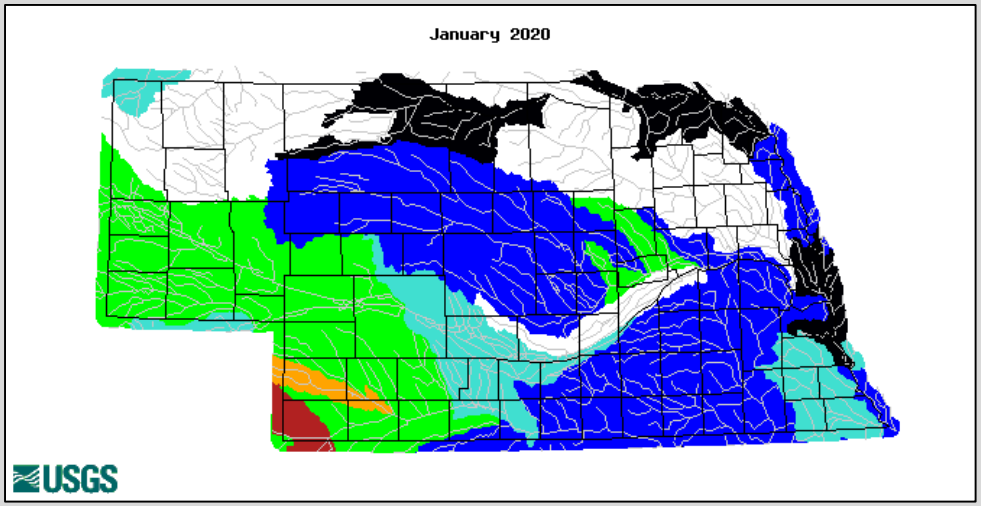
# Soil Moisture

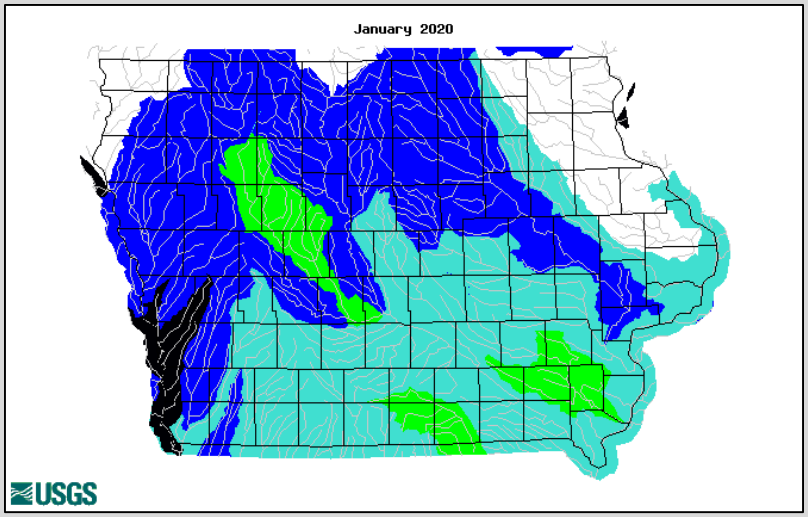
Soil moisture values are near-to-below normal for eastern Nebraska and western Iowa. Most of the Missouri River basin has below-normal soil moisture.



# Current Streamflow

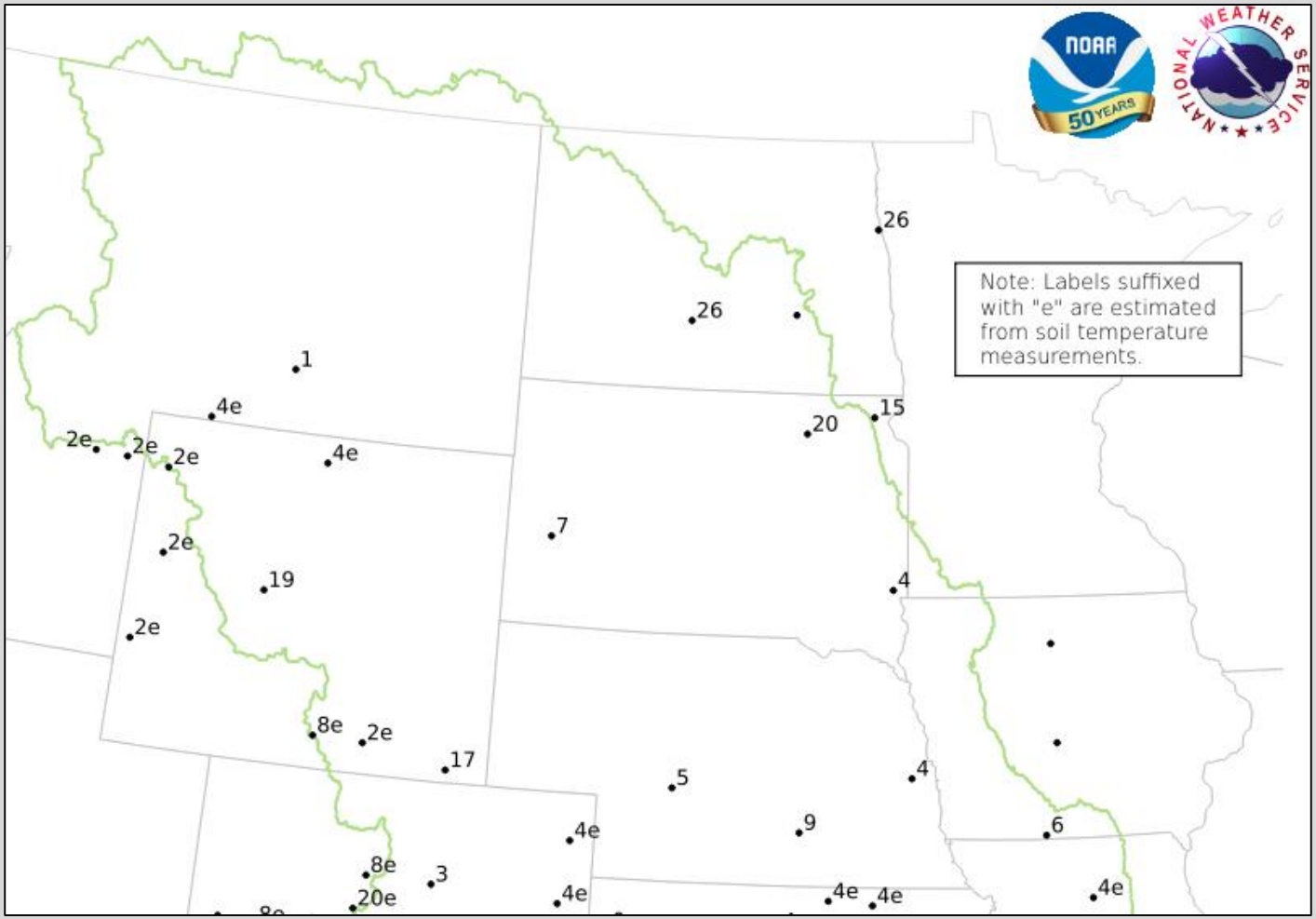
River levels are near-to-above normal



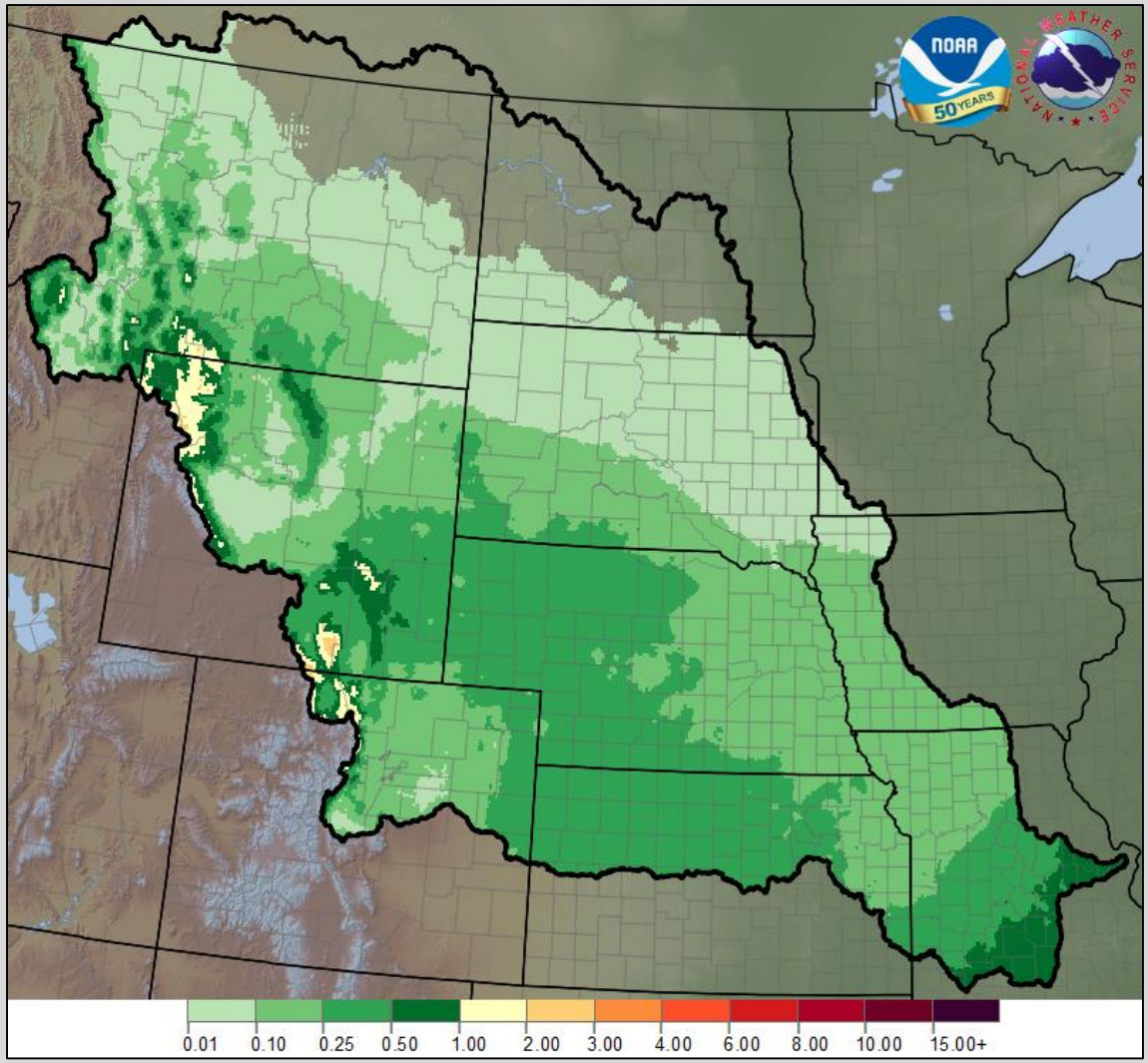

| Explanation - Percentile classes | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| Low | <10 | 10-24 | 25-75 | 76-90 | >90 | High | No Data |
| | Much below normal | Below normal | Normal | Above normal | Much above normal | | |

# Frost Depth




Frost depths across eastern Nebraska and western Iowa range from 4 to 9 inches.

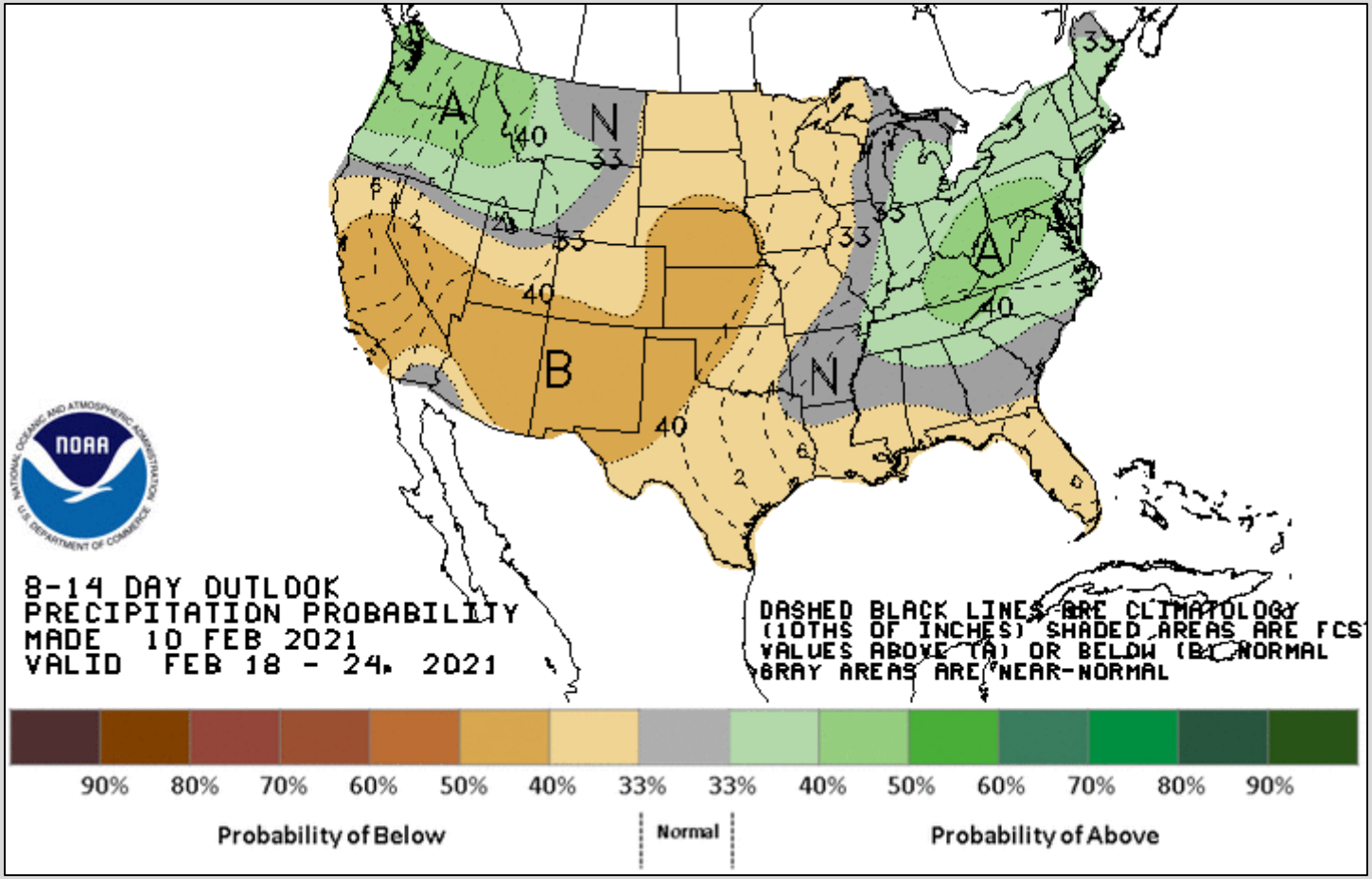
# Precipitation over the next 7 days




- Over the next 7 days, areas of Nebraska and northern Kansas will see light precipitation.

# Weather Outlook

## *8-14 Day Outlook*




**Precipitation will be below-normal.**

# Missouri River Flood Risk

## As of February 11th

| Missouri River | Spring Flood Risk |
|---|---|
| Sioux City to Decatur | Below-Normal |
| Blair to Omaha | Below-Normal |
| Plattsmouth to Rulo | Normal |

The flood risk along the Missouri River can be generally characterized as below-to-near normal this year. Below the Platte River confluence, as with most years, there is a normal risk of flooding.

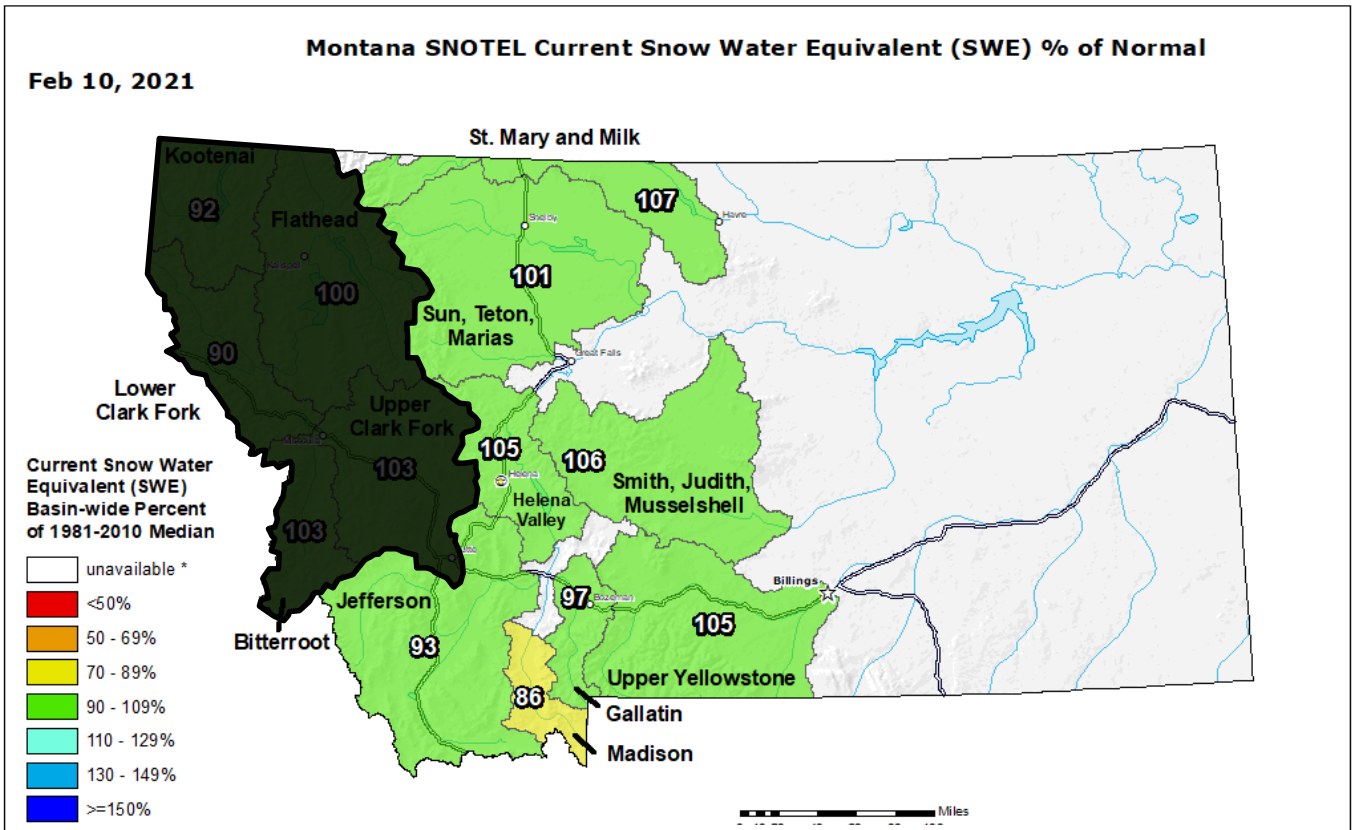
# Missouri River Streamflows

## As of February 11th

| Location | Current Streamflow | Long-term mean | Percent above normal |
|---|---|---|---|
| Decatur | 21,100 | 19,700 | 107% |
| Omaha | 23,300 | 20,000 | 116% |
| Nebraska City | 25,000 | 26,600 | 94% |
| Rulo | 26,300 | 28,100 | 94% |

Along the Missouri River, flows are near-normal.

# Mountain Snowpack (Missouri River)



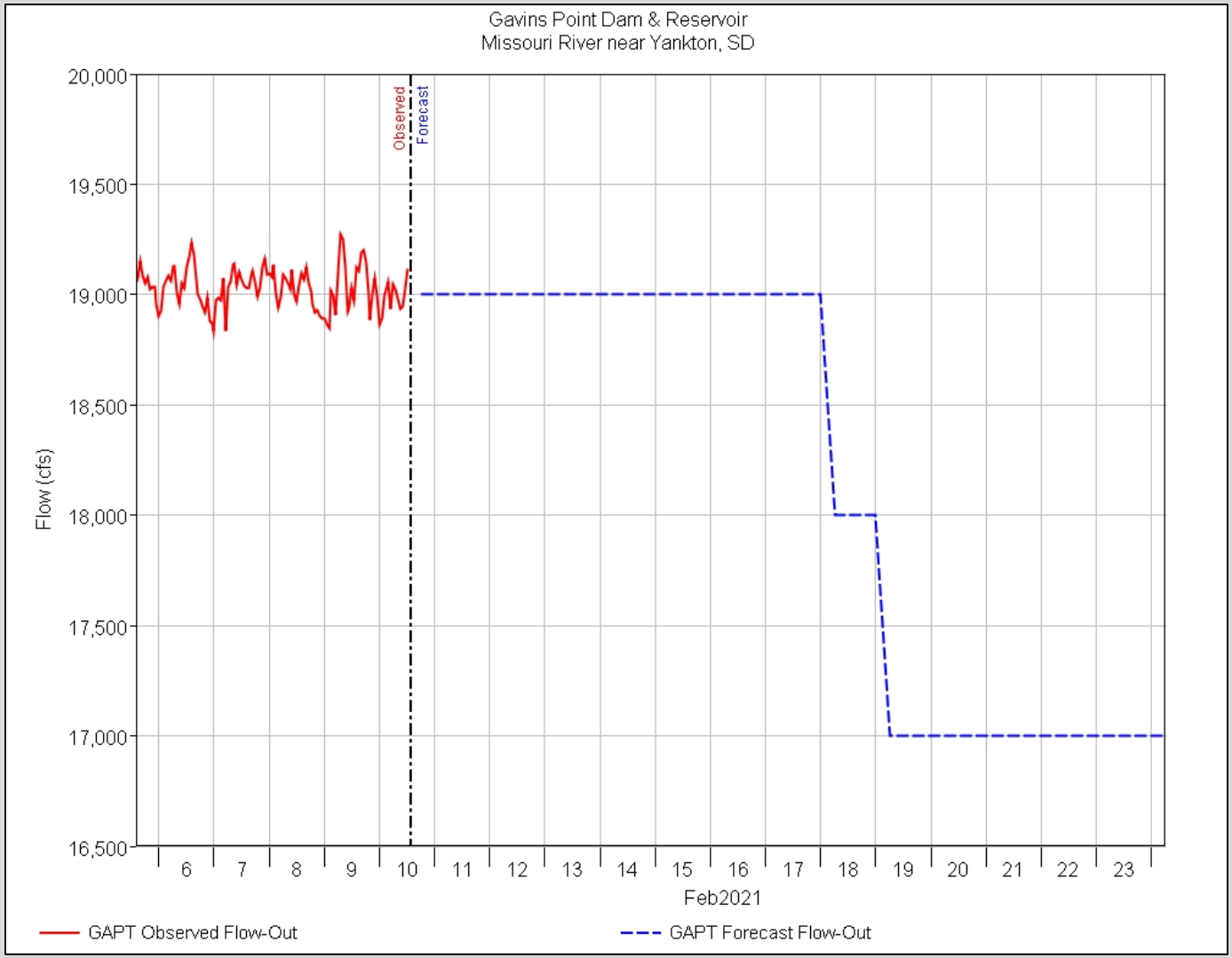

The mountain snowpack is normal for this time of year. Typically, the mountain snowpack peaks in mid-April.

# Reservoir Status

- By January 2021, system storage reached 56.1 MAF, the base of the Annual Flood Control and Multiple Use Zone.

- All stored flood waters from 2020 have been evacuated.

# Gavins Point Forecast



# Niobrara River Flood Risk

## As of February 11th

| Niobrara River | Spring Flood Risk |
|---|---|
| Verdel to Missouri River | Above-Normal (for ice jams) |

*Due to the very cold recent temperatures, the ice jam threat along the Niobrara River remains.*

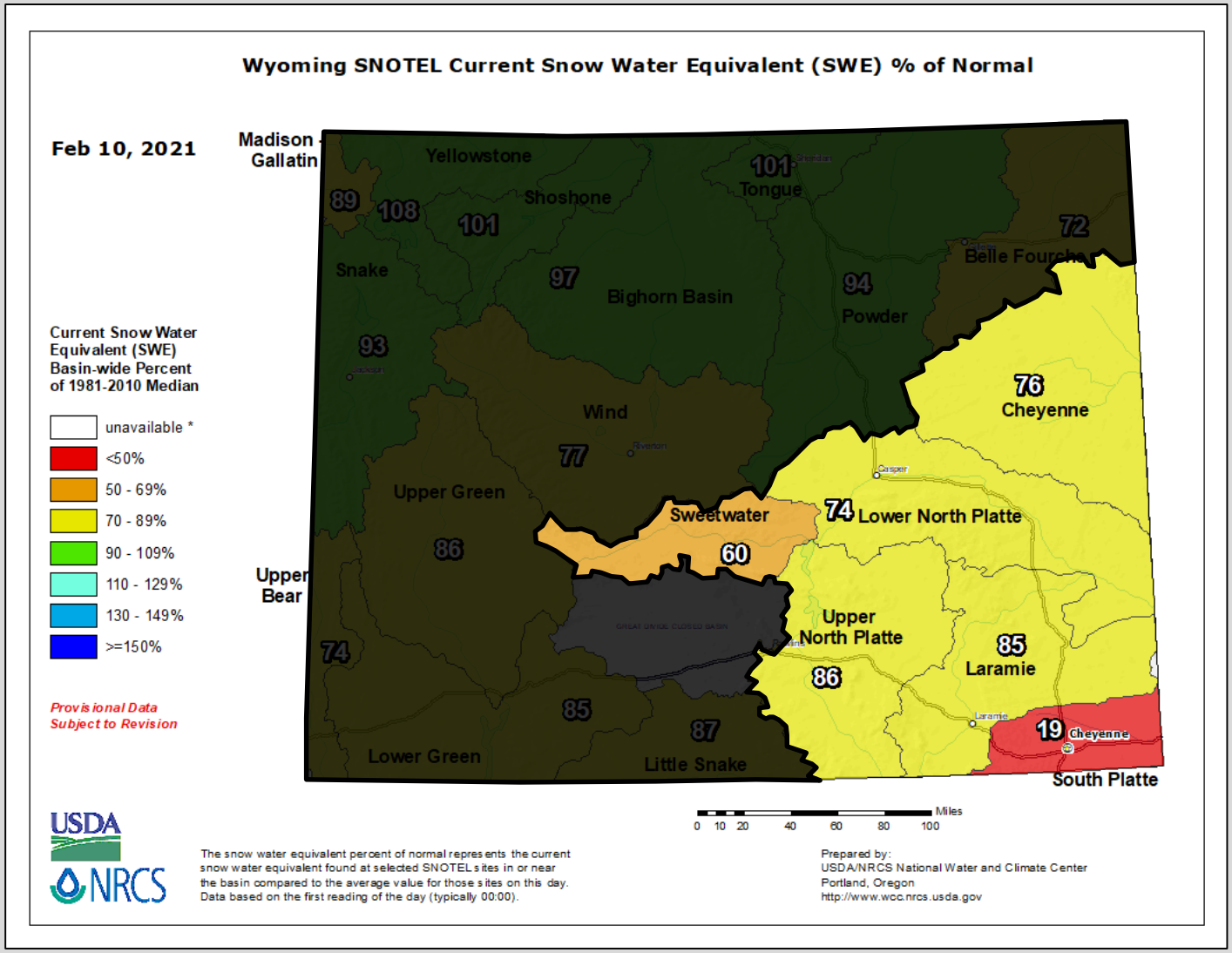
# Platte River Flood Risk

## As of February 11th

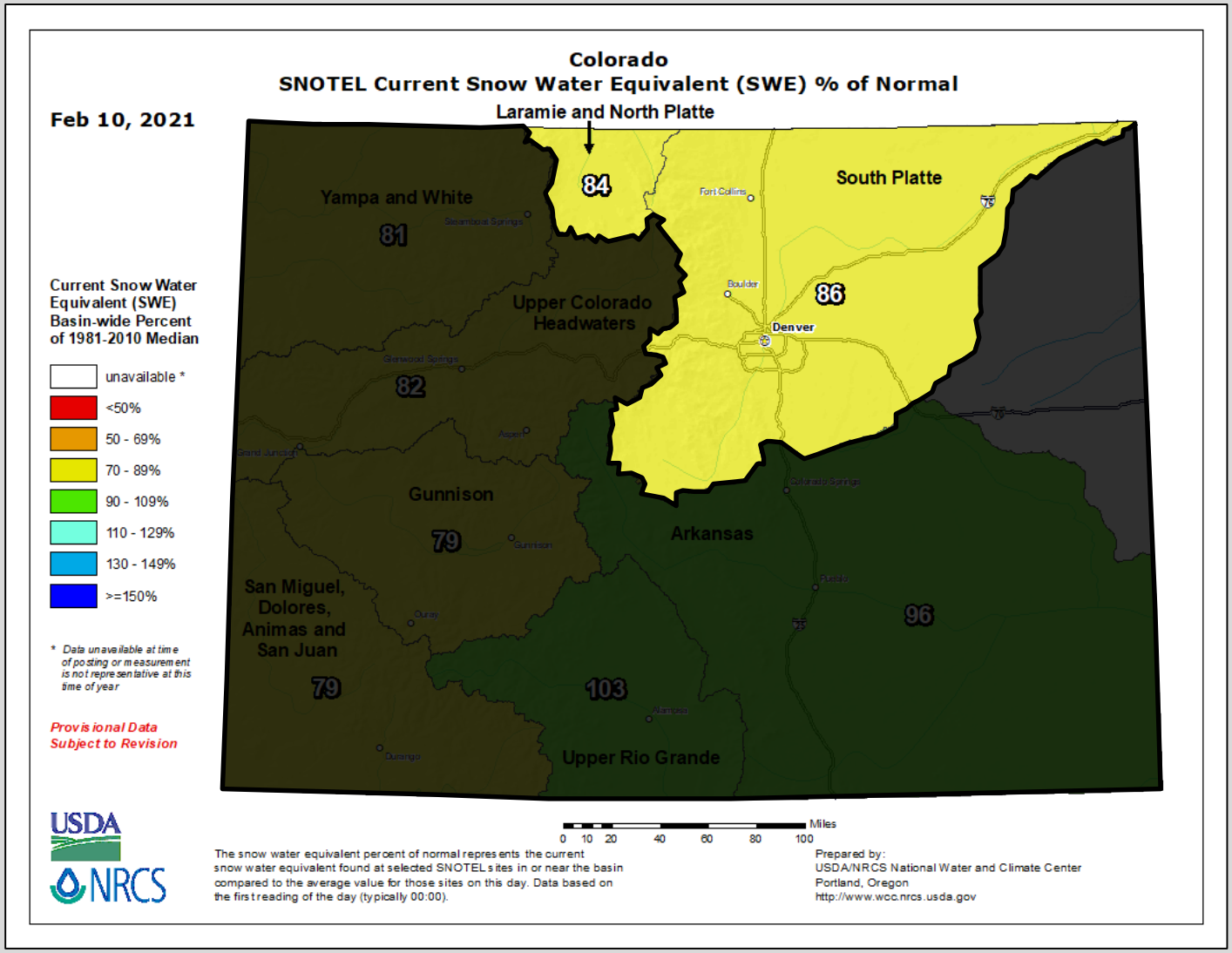
| Platte River | Spring Flood Risk |
|---|---|
| Kearney to Columbus | Normal |
| Columbus to Missouri River | Much Above-Normal (due to ice jams) |

As with every year, the ice jam threat is conditional. Meaning, the ice needs to move at some point and get "stuck". Due to a dramatic cold stretch of cold weather in February, ice thickness is increasing in many areas. Because an ice jam already happened at Fremont, and is ongoing as of February 11th, it stands to reason more ice jams are highly probable. Interests along the Platte River should remain alert to this potential once the ice starts to melt and move.

# Wyoming Mountain Snowpack (Platte River)



# Colorado Mountain Snowpack (Platte River)



# Loup River Flood Risk

## As of February 11th

| Loup River | Spring Flood Risk |
|---|---|
| Genoa to Columbus | Above-Normal (due to ice jams) |

The ice jam threat is higher downstream of Columbus but can't be ruled out in this stretch of the river.

# Elkhorn River Flood Risk

## As of February 11th

| Elkhorn River | Spring Flood Risk |
|---|---|
| Neligh to the Platte River | Normal |

There isi a non-zero threat of ice jams on the Elkhorn River this year, as with any year. Typical ice jam spots like near Crowel and Scribner should be monitored once break-up/ice movement starts in the coming weeks.

# Salt Creek Flood Risk

## As of February 11th

| Salt Creek | Spring Flood Risk |
|---|---|
| Roca to the Platte River | Normal |

# Big Blue River Flood Risk

## As of February 11th

| Big Blue River | Spring Flood Risk |
|---|---|
| Surprise to Barneston | Below-Normal |

# Flood Risk for Iowa Rivers

## As of February 11th

| Spring Flood Risk | |
|---|---|
| Maple River | Normal |
| Little Sioux River | Normal |
| Soldier River | Normal |
| West Nishnabotna – Hancock | Below-Normal |
| West Nishnabotna – Randolph | Below-Normal |
| East Nishnabotna – Red Oak | Below-Normal |
| Nishnabotna - Hamburg | Below-Normal |
| Nodaway River - Clarinda | Normal |

These rivers and tributaries have a below-normal to near- normal flood risk

# Flood Risk for other Nebraska Rivers

## As of February 11th

| Spring Flood Risk | |
|---|---|
| **Ponca Creek** | Slightly Above-Normal |
| **Niobrara River** | Normal |
| **North Fork Elkhorn River** | Normal |
| **Shell Creek** | Normal |
| **Logan Creek** | Normal |
| **Maple Creek** | Normal |
| **Wahoo Creek** | Normal |

These rivers and tributaries have a normal flood risk

# Flood Risk for other Nebraska Rivers

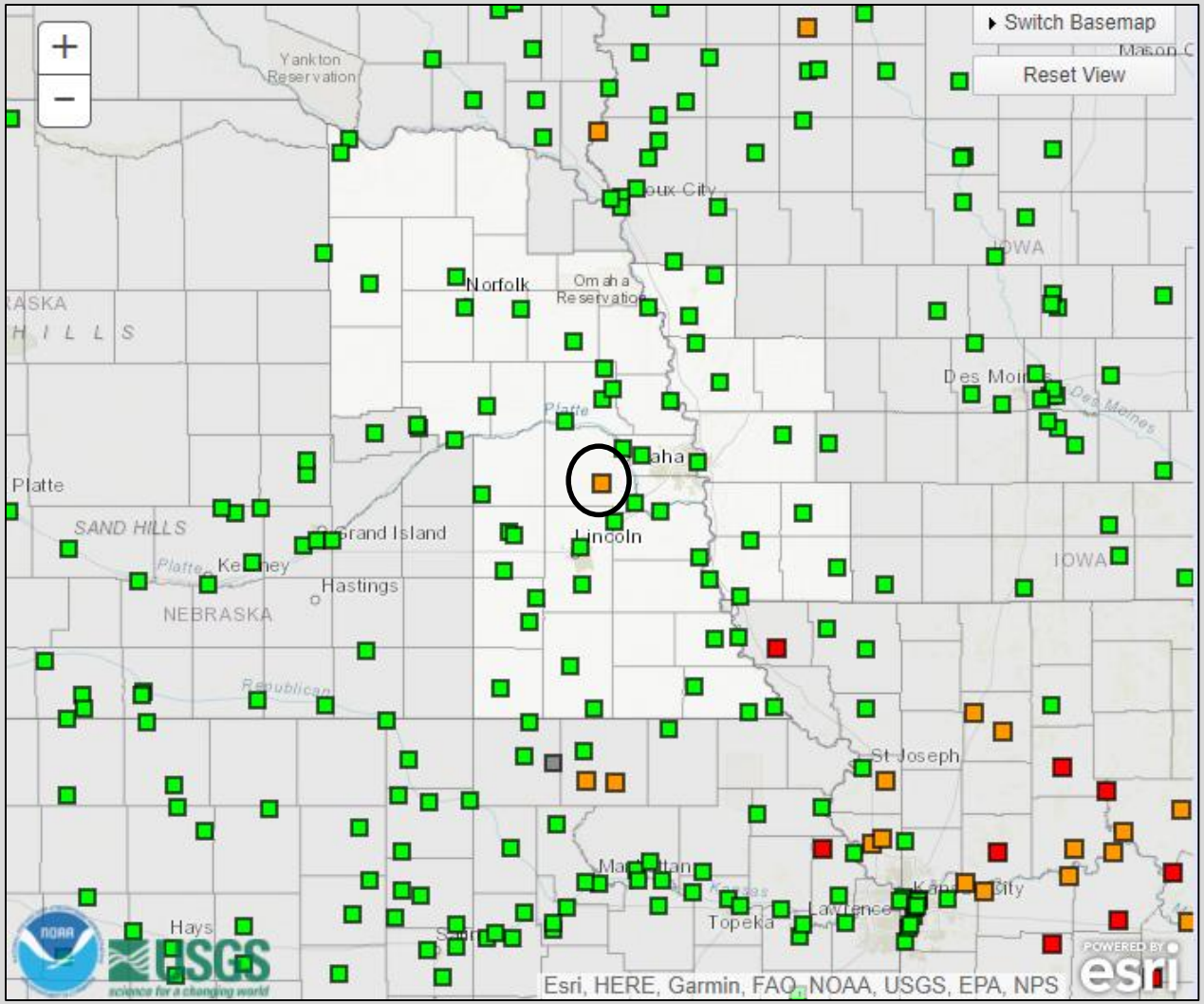
## As of February 11th

| Spring Flood Risk | |
|---|---|
| Lincoln Creek | Normal |
| West Fork Big Blue River | Normal |
| Turkey Creek | Normal |
| Little Blue River | Normal |
| Weeping Water Creek | Below-Normal |
| Little Nemaha River | Normal |
| North Fork Big Nemaha | Normal |

These rivers and tributaries have a normal flood risk

# Nebraska Flood Outlook

## *February through mid-May 2021*




**Orange: Increased chance for minor flooding**

**Red: Increased chance for moderate flooding**

**Purple: Increased chance for major flooding**

Most areas where there is an increased risk for flooding aren't high enough to show up on this map, the exception is Wahoo Creek which floods most years.

Note: This map does not factor in ice jams.

# Summary

- **Overall flood risk this spring:**
  - There is a **normal** risk of flooding this spring.
  - The flood risk is NOT elevated due to drier than normal soils and the general lack of a widespread/deep snow cover.
    - There is certainly time for the snow cover to increase in the remaining months of winter.
  - There is a higher-than-normal risk of ice jam flooding along the Platte River, especially near Fremont, Nebraska.

# National Weather Service
# Spring Flood Outlook

## For questions & additional information: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